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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,961	07/10/2001	Kunio Shimizu	02860.0683	7969

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EXAMINER

HON, SOW FUN

ART UNIT	PAPER NUMBER
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1772

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DATE MAILED: 03/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

09/900,961

Applicant(s)

SHIMIZU ET AL.

Examiner

Sow-Fun Hon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. In claim 1, it is unclear:

- a. How the cellulose ester film can comprise a different type of polymer unless the film were made up of more than 50 % cellulose ester, the cellulose ester forming the matrix of the film;
- b. What is meant by the limitation “functional group” since an ester monomer unit already has an ester functional group;

2. In claims 2-3, it is unclear whether the amount of monomer is the percentage based on the polymer or the film.

3. In claim 6, it is unclear whether the molecular weight in question is that of the ester having the functional group, or the functional group itself. Furthermore, it is unclear whether the molecular weight in question further limits the weight average molecular weight of the polymer. The number range of 10 to 150 does not make sense since a hydroxy group would already have a formula weight of 17 unless the number range actually defines the number of hydroxy groups instead. In any case, the limitation has to be reworded in order to make sense.

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9. In claims 12-13, the phrase "for use in" is not given any patentable weight since it does not result in a structural change of the film.

10. In claim 14, the phrase "for preparing" indicates intended use which is not given any patentable weight since it does not result in a structural change of the film.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3, 12. Claims 1-11, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Mercurio et al. (US 4,023,977).

Mercurio et al. has a 50 micron (μm) (2 mil) film (column 16, lines 10-20) cast from cellulose ester (acetate butyrate) and methyl methacrylate oligomer (column 16, lines 45-55). Since an oligomer is a very low molecular weight polymer of several monomer units, having a number average chain length of up to 25 mers (abstract), the polymer of methyl methacrylate has a weight average molecular weight of not more than 5,000, such as 750 or 1500 (column 2, lines 40-50). The amount of methyl acrylate (methacrylate) in the film is taught to be at least 30 % (column 13, lines 1-25). A functional group taught is hydroxy (hydroxyalkyl substituted derivative) (column 3, lines 1-20) which is water-solubilizing. The content of the polymer (oligomer) in the film is taught to be 30 weight % (the rest are solvents according to the

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statement in brackets) (column 16, lines 55-70). The film further contains fine particles (pigments, fillers) (column 9, lines 10-30).

Although Mercurio et al. does not disclose the water absorption rate or the moisture vapor transmittance of the cellulose ester film, since the cellulose ester formulation is taught to be soluble in organic solvents, not water, the examiner has taken the position that since the cellulose ester is not soluble in water and comprises at least 70 % of the film, a 40 micron thick cellulose ester film of Mercurio et al. has a moisture vapor transmittance of not more than 250 g/m².24 h at 80 ± 5°C and at 90 ± 5 % RH, and a rate of mass change of not more than 2 % as measured at 23 ± 3°C and at 55 ± 3 % RH after the film has been stored at 80 ± 3°C and at 90 ± 3 % RH for 48 hours, and then stored at 23 ± 3°C and at 55 ± 3 % RH for 24 hours.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mercurio et al.

Mercurio et al. has been discussed above, and teaches the cellulose ester film with the polymer of less than 5,000 weight average molecular weight comprising alkyl acrylate monomer.

In addition, Mercurio et al. teaches casting the cellulose ester dope (formulation) on a metal support (steel panel) to form a cellulose ester web (film) and drying the web (castings) in a drying apparatus (baked at 350 to remove solvent) to obtain a cellulose ester film. Although

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Mercurio et al. does not recite the step of peeling the web from the metal support before drying in a drying apparatus (baking to remove solvent), it would have been obvious variation in the art to have done so since it would have been alot easier to peel the web from the support while there is still some solvent left to act as a slip agent.

5 ~~a~~. Claims 12-13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwashita et al. (US 4,715,686) in view of Mercurio et al.

Iwashita et al. teaches a liquid crystal display comprising a first polarizing plate, a second polarizing plate, and a liquid crystal cell provided between the first and second polarizing plates, the second polarizing plate being arranged on the viewer side of the display, wherein the first polarizing plate has a first film, a second film and a first polarizing film between the first and second film so that the second film is provided on the first polarizing film on the liquid crystal cell side, the second polarizing plate has a third film, a fourth film and a second polarizing film between the third and fourth films so that the third film is provided on the second polarizing film on the liquid crystal cell side, and the first, second, third and fourth films comprise cellulose ester (acetate) (See Figure 1. The polarizing plate is obtained by sandwiching (protecting) the polarizing film between two cellulose ester (triacetate) films) (column 4, lines 55-70 and column 6, lines 25-35).

Iwashita et al., however, fails to teach that the cellulose ester film contains the methyl acrylate polymer.

Mercurio et al. has been discussed above, and teaches the cellulose ester film with the polymer of less than 5,000 weight average molecular weight comprising methyl acrylate monomer. Mercurio et al. teaches that the methyl acrylate polymer is added to cellulose ester to

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act as a plasticizer in order to modify the flow properties of the cellulose ester (for greater flexibility and hence lower brittleness) and yet not to an appreciable extent in order to allow it to retain its hardness (column 1, lines 45-60).


Because Mercurio et al. teaches that the alkyl acrylate polymer is added to cellulose ester to act as a plasticizer in order to modify the flow properties of the cellulose ester and yet allow it to retain its hardness, it would have been obvious to one of ordinary skill in the art to have used the cellulose ester film of Mercurio et al. as the cellulose ester protective film in the polarizing plate laminate in the invention of Iwashita et al. in order to obtain a polarizing plate laminate with both moisture and abrasion protection due to the retention of protective film hardness.

Any inquiry concerning this communication should be directed to Sow-Fun Hon whose telephone number is (703)308-3265. The examiner can normally be reached Monday to Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on (703)308-4251. The fax phone number for the organization where this application or proceeding is assigned is (703)872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0661.

874
Sow-Fun Hon
03/14/03


HAROLD PYON
SUPERVISORY PATENT EXAMINER
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3/17/03